

CLAIMS

1. A filtration device comprising:

a filtration tank, having a filter bed for supporting a layer of particulate filtration media;

5 a vertically oriented hollow cleansing tank having an opening at the lower end thereof, provided in the filtration tank;

10 a screw conveyor, for conveying the filtration media upwards within the cleansing tank while cleansing the filtration media; and

a contaminant expulsion means, for expelling contaminants separated from the filtration media during cleansing to the exterior of the filtration tank; wherein:

15 the screw conveyor has a shaft, which is suspended within the filtration tank from above;

the upper portion of the shaft is driven, and the lower portion of the shaft is supported by an axial support section, which is fixed to the lower portion of the cleansing tank; and

20 a frictional wear compensating mechanism is provided at a portion of the axial support section where the shaft and the axial support section contact each other.

2. A filtration device as defined in Claim 1, wherein:

25 a recess is provided in the lower end of the shaft of the screw conveyor;

a protrusion for engaging with the recess is provided on the axial support section; and

30 the frictional wear compensating mechanism is constituted such that the protrusion is constantly urged toward the screw conveyor by a spring.

3. A filtration device as defined in Claim 2, wherein:

the upper tip of the protrusion is conical in shape;

the recess is formed to be substantially complementary with the conical shape of the protrusion; and

35 a cutout is provided in the tip of the protrusion, or

a further recess is provided in the center of the recess.

4. A filtration device as defined in any one of Claims 1 through 3, wherein:

the cleansing tank is suspended within the filtration tank from above; and

the axial support section is mounted to the lower end of the cleansing tank.

5. A filtration device as defined in Claim 4, wherein the axial support section comprises:

10 a ring, which is mounted about the periphery of the lower end of the cleansing tank;

a spring for urging the protrusion;

a central portion for holding the spring and the protrusion;

15 and a plurality of link rods for linking the central portion and the ring.

6. A filtration device as defined in any one of claims 1 through 5, wherein:

the filtration media is activated carbon.